winai previous to his time had only been attained before an open fire. He subjected the meat throughout to heat, not high enough to scorch the surface, until the interior pieces had experienced the requisite modification to render them acceptable to the taste, and then introduced air heated to a temperature that would promptly brown the surface, causing the destructive distillation which is essential to produce the savor of well-rousted meats. The meats so prepared were considered not inferior to the best roast meats produced by slowly revolving them before an open fire, and required very much less fuel. The brick oven, especially designed for baking bread, has been greatly improved in the direction of economy of fuel and labor. I will call your attention to the plan of the Aerotherme, introduced about a quarter of a century ago in France, which surrounds the oven by trunks of heated air, maintaining, like the Rumford fron oven, a constant and regulated temperature. [The lecturer here explained several diagrams prepared to illustrate the operation of an Aerotherme.] (The lecturer here explained several diagrams prepared to illustrate the operation of an Aerotherme.) At the Paris Exhibition there were several mechanical bakenesin operation. One of them, a French device, had a series of open work shelves, each of the shape of a sextant, attached at the junction of the radii to a vertical shaft, by means of which the shelves could be swing over to a bed of coals or into heated space, and kept there till the bread or viscuit was baked, and then carried round to the point of commencement to be discharged. Another of American invention, had the shelves suspended in a huge open work cylinder, in which their horizontality could be maintaized, while by the revolution of the wheel they could be carried over the bed of coals, baked and returned. The Vienna oven is an Aerotherme, to which of American invention, had the shelves suspended in a huge open work cylinder, in which their horizontality could be maintained, while by the revolution of the wheel they could be carried over the bed of coals, baked and returned. The Vicana oven is an Aerotherme, to which two important additions are made; one to admit steam into the oven during the process, so as to maintain a moist atmosphere down to the last few minutes of the baking; and the other a separate fire, from which radiant heat, of great intensity, may be thrown into the oven and reflected from the smooth roof, to almost instantly readen a very thin crust. The cracker bakery is a highly heated trunk, through which an endiess metallic apron is made to carry a constantly renewed supply of cracker dough. The baked crackers are as regularly discharged from one end of the trunk as the fresh crackers in dough are introduced at the other. I will mention only one other invention in this direction. It contemplates the baking of a sufficient amount of bread to supply a city from a single establishment, and was the work of a man whose name is familiar to you from eminent services in the art of war as well as in the arts of peace, Mr. Hiram Berdan. He conceived the idea of an oven which should produce all the loaves of uniform evenness and with a rapidity before unheard of. His apparatus may be described as consisting of two towers filled with heated air, in one of which was an elevator always slowly ascending, and in the other a similar contrivance always slowly descending. On these was arranged a series of platforms with a few inches between, each platform, or huge tray, containing a bundred loaves or more. As each platform attained the summit in one tower it was shot across to the other tower, in which it descended to the bottom and discharged itself. As soon as it was discharged it was shot across to the foot of the ascending tower and refilled with loaves of dough to report the platform attained the summit in one tower the summit and in the same manner. they could be carried over the

SCIENTIFIC LECTURES.

THE BUILDOWN OF THE THE OCCA.

THE BUILDOWN OF THE OCCA.

THE BUILD broiling and toasting, the interior temperature rarely ex- Vienna, and London may be regarded as in some degree with the ductrine or mucous fermentation and goon steadily through the saccinarine and its accompanying phase of the ammoniacal will be at an end, and stop before the accite sets in. Patiennee, and watchfulness, and science, within the bakery as well as out of it, have accomplished this. The baker diluted the ferment largely with ductrine sugar or starch which would give especial activity to the ferments resulting in alcolic and carbonic acid, and sought to isolate the yeast plant suited to this object. You have all heard of brewers' or distillers' yeast. Let me tell you how they are produced. When a mass of ground rye, or corn, or wheat, is brought with warm water and the addition of a small quantity of yeast to a lively fermentation, the front is sammed off and repeatedly washed in large volumes of cold water from which it settles out a fine white powder. This is the yeast plant of the distilleries. If the wheat, or rye, or corn, was sound the yeast plant will be suited to bread fermentation, but if it was sour or in any way defective, the yeast plant will carry the taint to the dough. The brewer's yeast is made with more care; erashed rye is mixed with mult fineal and fermented. The malt, as you know, is made from barley which has been steeped in water, allowed to gorminate to consume nost of its gluton or diastase, and convert its starch into ductrine and sugar, and then roasted to arrest the germination. Of coarse, the mixture of rye and mait contain relatively less gluten and more gum and sugar than pure rye or wheat meal. The foam from this fermenting mass washed and pressed is largely made at Rotterdam and exported to England under the name of German barm. This substance is known to us, mixed with bran and dried, under the name of yeast cakes. These forms of ferment have the advantage that they may be made comparatively pure—that is, composed of the yeast plants that will yield galeohol and carbonic acid. When mixed with a large quantity of boiled potatoes (chiefly starch) they will yield precisely what proper care, to the nitimate production of alcohol and carbonic acid, and these alone, but when you take into

NEW-YORK DAILY TRIBUNE, THURSDAY, JANUARY 7, 1869.

be hable to callapse and become heavy and solden. I as aume that you have the genuine yeast plant, suited, with proper care, to the nitimate production of alcohol and carbonic scid, and these alone, but when you take it and carbonic scid, and these alone, but when you take it and carbonic scid, and these alone, but when you take it and carbonic scid, and these alone, but when you have the carbonic scid, and these alone, but when you take it and the carbonic scid, and these alone, but when you have the carbonic scid, and these alone, but when you have to determine the properties of the scidential to the influences of temperature and time you will readily understand that the pure yeast plant is to some parts of our country, not wholly confined to he is informed portions of communities, on the subject of alcohol fermentation in bread. In a report on bread alcohol fermentation in bread, in a report on bread alcohol fermentation in bread. In a report on bread carbonic science, and the fermentation must be carefully watched. It must be stopped at the right point was just before any on the stopped at the right point, by putting the bread in the own, and the right point was just before any of the produced in the own, and the right point was just before any of the produced. This recalls the advertised that bread backed by him contained not of the alcohol produced in the own, and the right point was just before any of the produced of the produced in the own, and the right point was just before any of the produced in the right point, by jutting the bread in the own, and the right point was just before any of the produced in the right point, by jutting the bread the alcohol produced in the produced produce

The control of the co

cellular texture. This is an essential condition of the heaithful preparations of farinaceous food. It should be porous, to permit the ready imbilition of the fluids that serve in digestion. The self-leavening flour is the substratum upon which whatever is desirable may be erected. Mixed with water, or sour milk, and immediately baked in a hot oven, it gives plain bread. If the tins are small the result is bisenit. Increase the quantity of water, bear in an egg, and spread the paste on a hot plate, and the product is a griddle cake. Add molasses and ginger, and you have gingerbread. Stew the leavened mass with raisins and you have a pudding. Eggs, sugar and flavoring extracts give you sponge cake. If there be a fancy for the faint, delicate aroma of hops in bread, replace a portion of the water with Scotch ale. If a rich reddishbrown crust to the bread be desired, add a trace of sirup to the milk or water. Will you apply the self-leavening principle to other forms of farinaceous food, mingle the phosphoric acid and the blearbonate of soda with the corn meal, or rice, or rye, or buckwheat, and the task is accomplished. With the self-leavening agent at command, little time and moderate skill are required to secure uniformly excellent results. Let me conclude by giving you special instructions for making good yeast bread, the phiosophy of which. I will hope, will now be easy to comprehend. Select good, plump, fully ripened, hard grained wheat. Have it freship ground, and not too flavely botised. Prepare the yeast as follows: Boil thoroughly with the skins on, in one quart of water, enough potatoes to make a quart of mashed potatoes. Peel the boiled potatoes and mash them to fineness; mix intimately with them one pint of flour, and stir the whole to an enumbson with the water in which the potatoes were boiled. Cool the product to about 80°, (lukewarmness), and add half a pint of the best fresh baker's yeast, and a tablespoonful of brown sugar. Set aside the mixture at an even temperature of about 80°, till it works plates or stiff-paper till the dough is fully raised and the heat carried up to and sometimes maintained throughou the loaf at 212°, to convert all the starch to the mucilagin ous or emulsion form and destroy the ferment. Then re move the cover, and permit the browning to take place if the loaves are large a higher temperature will be required. Seven pounds of flour will make eight loaves or 1½ is each when baked, or four of 2½ is each. Such yeast will keep a wock in Winter and from two to four days it Summer. Bread made with it, in faithful obedience to those instructions, will be good.

## THE SPOILS OF OFFICE.

THE NEW-YORK CUSTOM-HOUSE.

At the present time, when so many are patriotically seeking an opportunity to cooperate with the new Administration in its efforts to restore the country to its old prosperity and happiness, and only wait to try to its old prosperity and happiness, and only walt to learn in what capacity the public desires their services, the following article will be found full of interest and timely information. In studying the system of labor in our Custom-House one must indeed wonder at the extent to which the spirit of public duty and sacrifice is relied on by the Government in exceining an institution which calls for so great a draft from the most capable of our citizens. And yet, we believe, men can be found ready to "stand in the gap" at every one of the posts below enumerated:

The Collector of this Port has a salary of \$5,400, beside perquisites arising from selzures, which amounted in the

Enumerated:

The Collector of this Port has a salary of \$5,400, beside perquisites arising from seizures, which amounted in the last fiscal year to over \$42,000. There are other sources from which a Collector may derive a revenue, but these we may allude to hereafter. In his immediate doties he is assisted by an Assistant Collector, who has a salary of \$5,000, and some 10 clerks.

In the organization of the Custom-House proper the labor is divided into 12 divisions.

The First Division is the Auditor's Department, which keeps the general accounts. The Auditor receives a salary of \$7,000, and is assisted by a First Assistant, with a salary of \$5,000, and a Second Assistant, with a salary of \$5,000, and a Second Assistant, with a salary of \$1,000, and upward of so Clerks.

The Second Division is the Cashier's Department. The Cashier has a salary of \$5,000. His Assistant, \$5,500. There are about 10 Clerks beside in this Department.

The remaining departments are in charge of ten Deputy Collectors, who receive a salary of \$3,000 each.

The Third Division, or Warchouse Department, is one of the most extensive and important ones under the Collector, and employs a force of about 75 clerks. In addition it has charge, under a Superintendent, of all the warchouses. This Superintendent also receives a salary of \$3,000 and has the immediate control of the 115 Store-keepers, whose salaries of \$4 per diem are paid by the proprietors of the bonded warchouses in which they are employed. The opportunities of the Deputy in charge of this division are ample for private arrangements with warchouse proprietors, and for extended illegitimate transactious, both untler cover of and in defiance of the regulations.

The Fourth Division has charge of the entrance and regulations.
The Fourth Division has charge of the entrance and

clearance of vessels, and employs about 20 clerks. (It is understood that Mr. Pollard, from Virginia, has lately re-

clearance of vessels, and employs about 20 clerks. (It is sunderstood that Mr. Pollard, from Virginia, has lately resigned his position in this division.)

The Fifth Division has the control and direction of the business of all the entry, bend, and amendment clerks, beside the exclusive direction of the issue of "Free Permits." The deputy of this division designates, also, the cases which shall be sent to the appraisars for examination. The chief clerk receives, by special act of Congress, a salary of \$3,500, which may not have been extravagant in the days of his youth and usefulness. His assistant receives \$4,700, and the 10 entry clerks \$4,500 each, in addition to the regular tax which some of them are said to levy upon the merchants for whom they pass entries. Beside the ones mentioned, there are some 20 more clerks employed in this division.

The Sixth and Seventh Divisions have charge of the involces and orders, and employ some 40 clerks.

The Eighth Division, or Drawback Bureau, has some 15 clerks, with less employment than formerly by reason of recent changes in the Revenue laws.

The Ninth Division, or Law Department, has charge of all suits brought by or against the Collector, the cancellation of bonds, and charge of the archives, and employs some 12 clerks.

The Tenth Division, or Seizure Bureau, employs a simi-

some 12 clerks.

The Tenth Division, or Seizure Bureau, employs a similar number of cierks. As the larger portion of the Collector's revenue comes through this channel, its business is attended to with unusual vigilance. The Surreyor is attended to with unusual vigilance. The Surveyor and Acting Navai Officer devote to it their chief time, and constitute, with the Deputy in charge, a triumvirate that is not only a terror to evil-doers but also to the ignorant and the unwary.

The Eleventh Division has the custody of the goods while in the hands of the appraisers, and employs some 50 clerks. Its duties are coordinate with those of the appraisers.

The Twelfth Division is a newly-devised scheme for increasing the expenses in collecting the expenses in collecting the expense and to

praisers. Its diffusion is a newly-devised scheme for increasing the expenses in collecting the revenue, and furnishes sinecures to some six or eight patriots who attend to the cording and scaling of packages which are destined to be shipped via Panama. The chief of this Division is an experienced merchant from the commercial regions of Keunteky!

The Naval Office is presided over by a naval officer with a salary of \$5,000 and shares similar to those of the Collector. It is at present vacant. This office was organized under the law of 1799, which provided for giving credit for the payment of duties under a system that required the taking of bonds for the amounts probably due. The bonds having to run for different periods, it was found necessary to have the daily action of the Collector checked by a coordinate officer. By a law of 1846 this provision was repeated, and cash payment of the duties required, thus making the Naval Office whelly superfluons. It is merely an unnecessary audit of the Collector's accounts, which are all thoroughly reviewed by the Commissioner of Customs in Washington. The office has not been filled since the resignation of Gen. Dix, who held it for some time after he was appointed Minister to France, and its duties are now performed by a special deputy, who, it is understood, receives a part of the shares growing out of the distribution. The office employs three deputies and five entry clerks at \$2,500 each, and other clerks, numbering 60 in all, at a cost of about \$100,000 per annum.

The Surveyor's Department has charge of the out-door service incident to the collection of customs. The Surveyor is, in the eye of the law, a chief deputy or head Inspector—the recommendation of the Commissioner of Customs that he should be more independent of the Col-

service incident to the collection of customs. The Surveyor is, in the eye of the law, a chief deputy or head Inspector—the recommendation of the Commissioner of Customs that he should be more independent of the Collector to the contrary notwithstanding. The Surveyor pockets \$4,500 and the spoils, equal in amount to those of the Collector. He employs three deputies, at a salary of \$2,500. One of these gentlemen, with a corps of a dozen detectives, has the special charge of the landing of passengers with their packages, and, consequently, abundant opportunities for making seizures. The law awards a moiety to the seizing officer. In practice, however, it is found that the Surveyor, with his deputy or some "ring," absorb all the money accruing from seizures, to the exclusion of the faithful officer who should be regarded as the informer. This branch of the service employs a corps of 250 inspectors, at \$4 per day, and half as many night watchmen, at \$4 50 a day. It has also at its disposal two Revenue cutters, for boarding purposes, the charge of which the Collector has assigned to a literary gentleman, who occasionally dovotes an hour to the dulies of his position. A very large portion of the infamy attaching to the Custom-House is attributable to the operations of the Inspectors. Some of them are indeed excellent men, but many receive their appointment chiefly as a reward for their services as pothouse politicians.

The demands of these inspectors, especially upon the steamship lines, are becoming more and more importunate, intolerable, and extravagant, in fact so much so that the reliary which each officer receives from the Government is far the small—share of the booty he carries away with him. In addition to all this the Surveyor has also charge of the weighers and gaugages. The It elies acrificing individuals who hold these positions draw each a salary of \$2,500 and perquisites amounting to as much nore, and kindly permit their foreman to do their work

away with him. In addition to all this the Surveyor has also charge of the weighers and gaugers. The 21 self-sacrificing individuals who hold these positions draw each a salary of \$2,500 and perquisites amounting to as much more, and kindly permit their foreman to do their work for a renumeration paid by the Government. The weighers and gaugers employ also a labor force, for which they expend an annual stipend of \$200,000.

The Appraiser's Department is independent of the Collector, having charge of the appraisal of merchandise. The Appraiser receives a salary of \$4,000, and his 19 Assistant Appraisers receive \$3,000 each. These give again employment to 44 Examiners, with salaries ranging from \$1,500 to \$2,500, and some 50 clerks and 100 laborers, styled openers and packers, receive a compensation of \$3 per day for a service that is usually concluded by 2 p. m. There is also a Gener I Appraiser, with \$3,000 salary, and a clerk assistant with \$2,500.

The manual labor at the Appraiser's store is now performed by contract, at a cost of \$90,000 per year, while the cartage of goods to the public store, for which the Government has to pay, cost \$90,000 more, bringing the entire cost of the Appraiser's Department, including rent, up to the respectable figure of \$600,000. The Collector's Department swallows \$650,000, that of the Surveyor, with its weighers and gaugers. \$750,000 more, making the grand total cost of collecting duties at the Port of New-York more than \$2,000,000 per annum.

There are about 205 positions with a salary of \$750 to \$900; 163 that bring \$1,000; 154 with \$1,000; 37 with \$2,000; 82 with \$2,500; 23 with \$3,000, beside some with \$3,500 or \$6,000. Beside these regular forces, there are many others at work in the pursuit of money—brokers, lawyers, &c., most of whom seem to prosper.

How one may get one of these 1,000 places, and how to turn a penny when there, together with other interesting items meddent to the place, we may chronicle hereafter.

The Chicago cheese trade now boasts an annual business of \$900,000. Three thousand tuns of cheese were sold there last year. Most of this amount came from our own State, Now-York. GENERAL NOTES.

There is a Horse Thief Detective Society in Richland, Ohio.

The glass work for the Colt memorial church in Hartford will cost \$7,000. The chancel window costs

\$2,000. A grand State Chess Tournament is to be held in Jackson, Mich., during the present month, beginning on the 19th.

Many gentlemen in Bridgeport, Conn., are practicing with the velocipede. They seem to prefer the sport to skating.

The third game of the chess match, between the Springfield and Boston Clubs, was begun last Monday night, by telegraph: Miss Elwood, the professional skater, is an-

nounced at the Buffalo Rink to give an exhibition, dressed to represent Mercury." A Massachusetts inventor is patenting an ar-

rangement by which all the cattle in a burning barn can be turned loose without loss of time. The opening of the "Mammoth Skating

Rink" in Philadelphia, last evening, was to have been the "event of the season" in that city. A young Paris student fell from the caves

of a building, a few weeks ago, while trying to get to his lady-love's window in a neighboring house. Mrs. E. D. E. N. Southworth's residence in Scorgetown, D. C., is called Prospect College. She had a

fancy dress party there on New-Year's Eve. The Rev. B. M. Tillotson of Manchester, N. H., has married 1,750 people within 25 years. He has

ouried 1,400 people and preached 2,600 sermons. Garroting is becoming very common again at Boston. The papers report cases every day, and it is really unsafe to travel the streets late at night.

A young lover near Ashland, Tenn., stole the dend body of his sweetheart while it was lying in its coffin at her father's house on Christmas eve and hid it in a

Queen Olga of Greece walks the streets of Athens, with her baby in her arms, stops and talks with all the mothers she meets, and compares bables with them. The Gettysburg National Soldiers' Monument,

which is to be consecrated next July, will be of marble, 65 feet in hight. The crowning statue represents the Goddess of Liberty, and is 10 feet 6 inches high; it was cut in Italy. The officials at the Springfield armory annoy

and persecute such of the employes as they suspect of furnishing information to the press, and especially those who have made statements on the eight-hour question is The Republican. A Newfoundland dog saved the life of his drunken master, a soldier, garrisoned at Fort Preble, in Portland harbor last Saturday night. The drunkard was

freezing in the snow, and the dog watched him and howied until help came. A ten years old boy took possession of an engine standing on the rallroad track, at Ashburnham, Mass., on Tuesday, and started at full speed for Fitch-

burg. The engineer, on missing his machine, followed on hand-car, and succeeded on overtaking the runaway, who had exhausted his steam. A very old negro died somewhere down South recently who had not been a body servant of George Washington. This was hardly credible until another died last Tuesday in Richmond at the age of 121

years. He professed to have been only a wagon-driver in the Revolutionary War. Both these cases are recorded as phenomena. The authorities of Indianapolis have declared the severest penalty of the law against women of the town. Thirty of these unfortunates have petitioned the City Government to pay their fare from Indianapolis to such other distant places as will afford them shelter and

employment, and where the reputation of their past life will not follow them. Dr. Newman, an eminent New-Orleans divine, recently challenged the editor of The St. Mary's (La.) Planter's Banner to personal combat. He is a Re-publican in sentiments, and defends his belligerency by saying that Moses, Joshua, and David fought, and none of

them had to contend with such children of the devil as

the Rebels of that country. The Imperial Government of France is endeavoring to stifle the murmurs of those who have been suf-ferers by the Moxican loans, by holding out a prospect of part repayment. The Minister of Finance has published an official statement of the funds which he stands possessed of for the relief of those engaged in that unfortunate and immoral speculation.

Most people think the true value of a greenback is found by deducting the premium on gold from 100. This, of course, is an error. Take the price of gold as the divisor, par or 100 as the dividend, and the quotient will give the gold value of the greenback. For example, gold is about 135. Dividing this by 100, we find that a dollar greenback was worth about 74 cents in gold.

The number of "houses" constructed in Paris luring the year ending the 1st of October last was 3,635. The "houses" in France contain at least five or six apartments," and accommodate as many families. The umber of houses pulled down during the same period was 1,761; of these, 717 were demolished contrary to the wishes of the proprietors, under "public utility."

The Empress Eugenie, though reported very ich at the time of her marriage, was only moderately ealthy; with her spendthrift habits and the expenses onnected with her exalted position, she has managed to neur more debts than she can pay, unless she curtails her expenses by two-thirds. One of her Spanish estates was sold in 1862, and the other, which cannot be sold, un. der the laws of Spain, is heavily mortgaged.

Ten years ago, the Great Lake Superior Mineral Region was comparatively unknown. Its vast resources have been abundantly developed within a very few years, and to-day it furnishes annually 500,000 tuns of iron ore-one-fourth of all the ore produced in the United States-and is rapidly increasing its production. It is estimated that in the next five years it will be 1,000,000 tuns. Of this quantity, 300,000 tuns go to Cleveland Erie, and other Lake Erie ports. Very little of it has, strange

There are nine cemeteries within the city limits of Boston ; four of them are under churches No interments are now allowed in any of them, except two, in South and East Boston. With one exception, they all appear to be at present in good condition; all are well cared for, and offer considerable attraction to visitors. They are opened to the public for a few hours on each Sunday during the Summer months. The celebrated Mount Hope Cemetery, in Dorchester, is now the only one commonly used. Lit was purchased by the City of Roston in 1857.

Silk, it is said, possesses peculiar medicinal properties. In Pomet's history of drugs, he says that ilk was used in his time as a medicine by reducing the pure part of a cocoon into a powder. Silk thus prepared has the virtues of cleasing the blood, making the spirits brisk, and heart pleasant. Neumann found that for materials afforded an equal quantity of vointile alkail. Tournefort obtained from 15 ounces of silk two ounces of volatile sait; this when rectified with some essential oil, was the medicine formerly celebrated under the name of Cutte Anglicare," or English Drops.

A citizen of Springfield, Mass., writes home in private letter that "the people of New-Orleans are terribly poor. More money is received for cotten and sugar than ever before, but it goes direct into the hands of the laboring millions, thence, through country dealers, into the pockets of wholesale dealers in different cities. New-Orleans was supported heretofore by the money of tens of thousands of planters, who, with their families, would spend a part of each Winter here, and make a vast retail trade. Now the people are eating each other up, and will continue to do so until the people in the country make two or three crops."

The Supreme Court of New-Jersey decided recently that a minister of the Protestant Episcopal Church, who is barred out of the church edifice and parochial house by the wardens and vestry, has a right of action for damages against them, and that in such suit a verdict for substantial darrages should not be set aside. The Court also decided the following points: A minister of the Protestant Episcopal Church of the United States has either the possession of the church or a right to enter therein on all occasions set apart in the parish for divine service, and a substantial interference with such right will lay the ground for an action at law. The English ecclesiastical law forms the basis of the law reg-ulating the affairs of this denomination of Christians. In order to vest the paster with the ordinary rights in the temporalities pertaining to his office, it is not neces-sary for the congregation to be incorporated, nor that the title to the church should be lodged in such congregation. The Episcopal Bishop of Michigan made a decision contrary to this not long ago, in the case of the Ref. M. C. Lighnver of Detroit.